DRAFT 02/25/2008

Manual Certification (Prior Art)

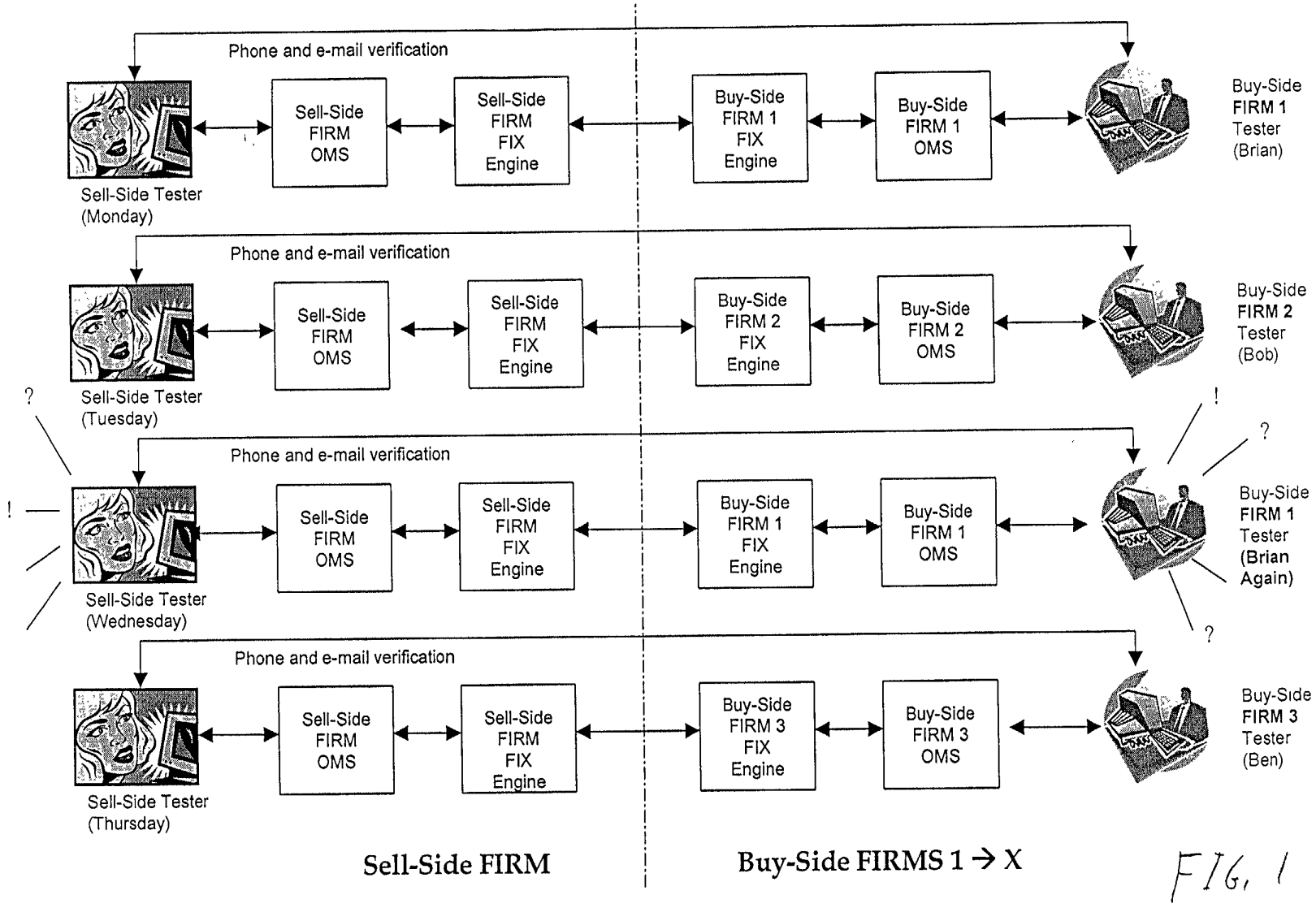
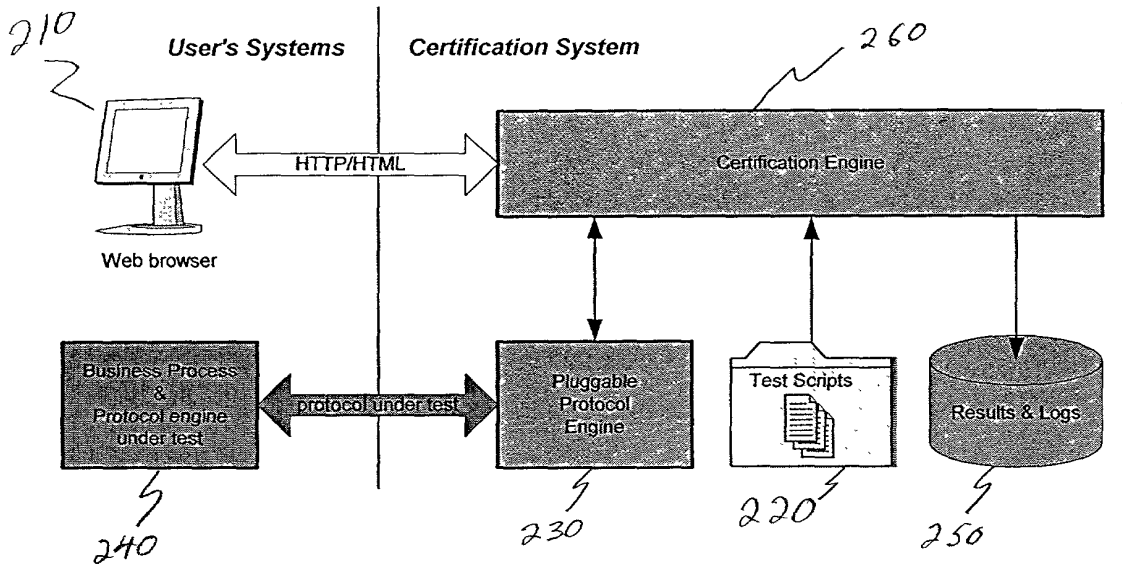


FIG. 1


210
User's Systems
Certification System
260
HTTP/HTML
Certification Engine
Web browser
Business Process & Protocol engine under test
protocol under test
Pluggable Protocol Engine
Test Scripts
Results & Logs
240
230
220
250

F16.2

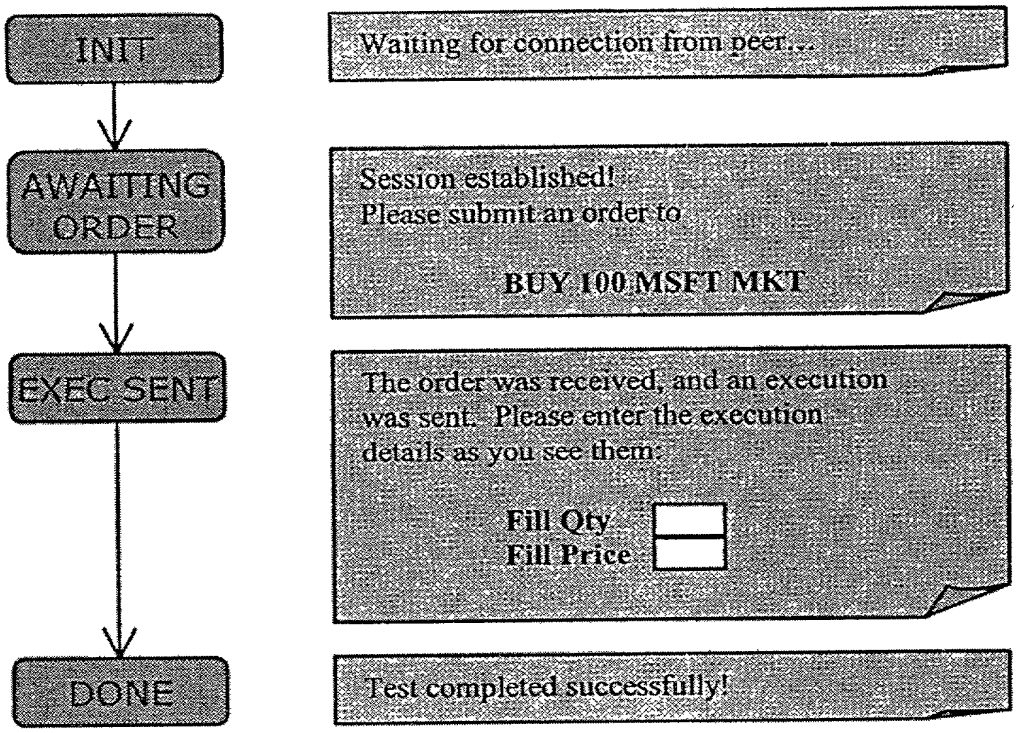

INIT
AWAITING ORDER
EXEC SENT
DONE
Waiting for connection from peer...
Session established!
Please submit an order to
BUY 100 MSFT MKT
The order was received, and an execution was sent. Please enter the execution details as you see them:
Fill Qty
Fill Price
Test completed successfully!

FIG. 2A

TOZOFF 9259360

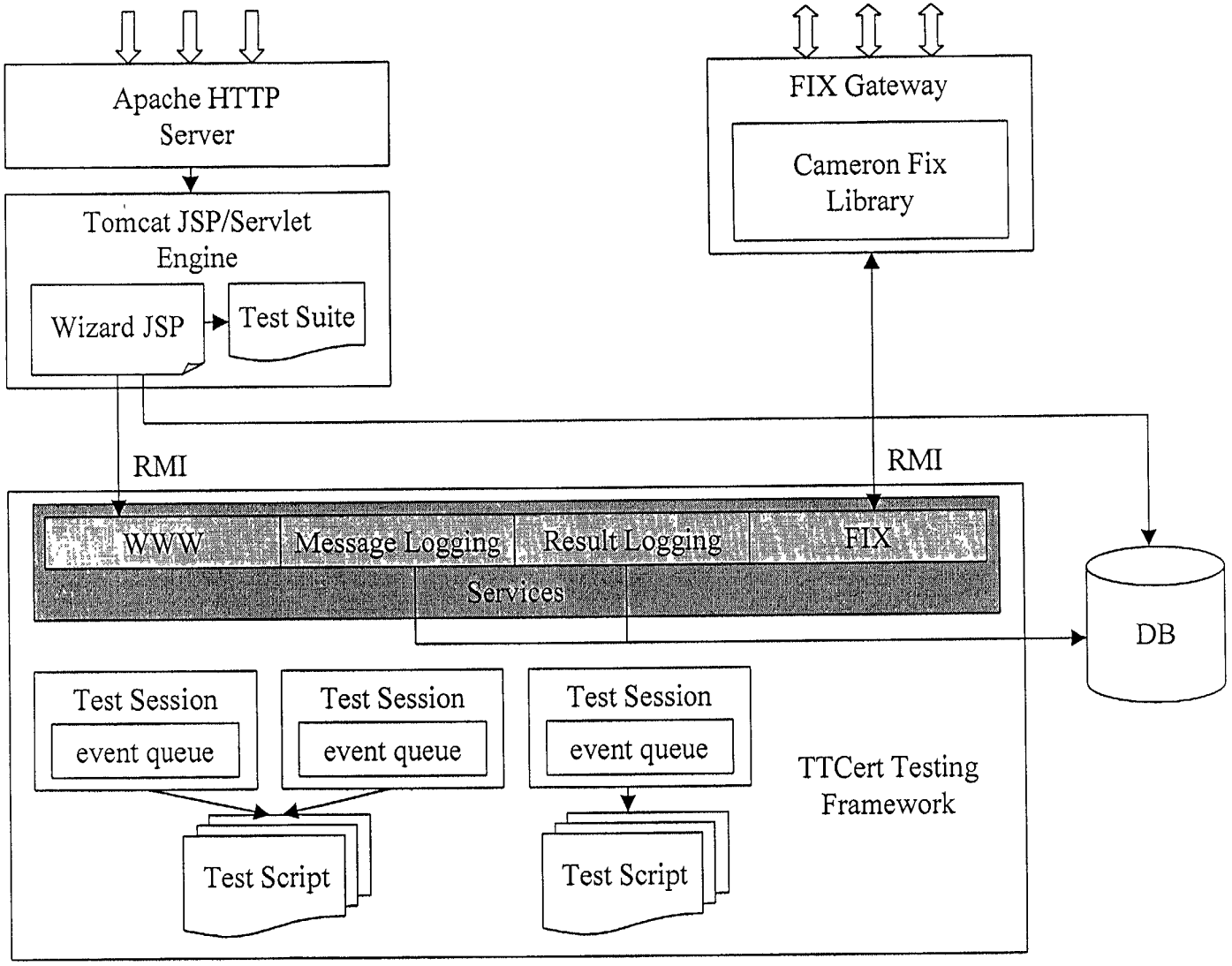


FIG. 3

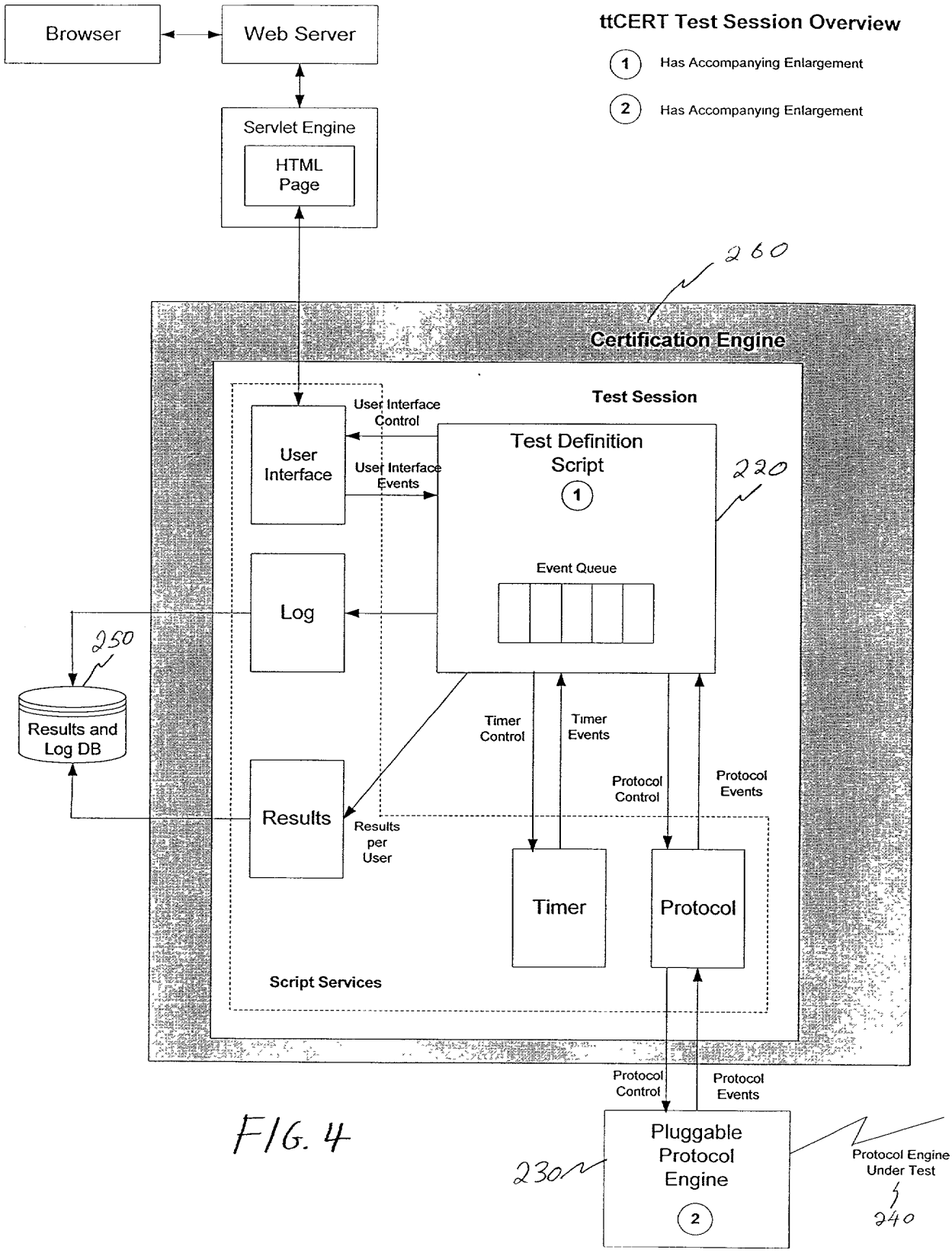

ttCERT Test Session Overview
1 Has Accompanying Enlargement
2 Has Accompanying Enlargement
Browser
Web Server
Servlet Engine
HTML Page
260
Certification Engine
Test Session
User Interface Control
User Interface Events
User Interface
Test Definition Script
1
220
Event Queue
Log
250
Results and Log DB
Timer Control
Timer Events
Protocol Control
Protocol Events
Results
Results per User
Timer
Protocol
Script Services
Protocol Control
Protocol Events
Pluggable Protocol Engine
2
230
Protocol Engine Under Test
240

FIG. 4

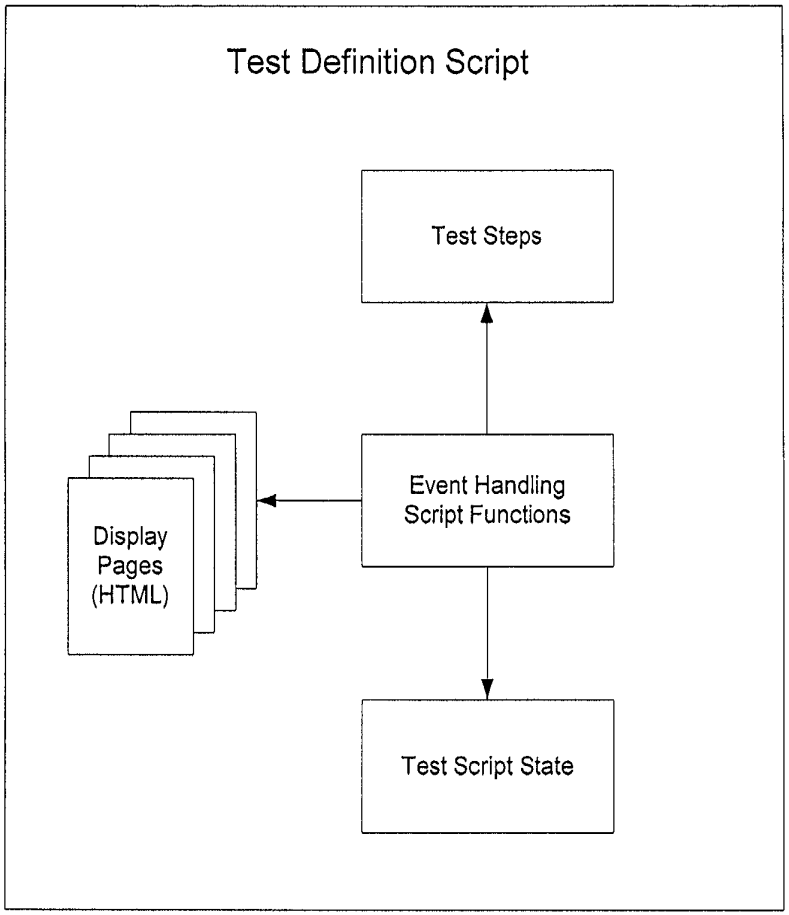

Test Definition Script
Test Steps
Event Handling
Script Functions
Display
Pages
(HTML)
Test Script State

FIG. 5

DOCKET ALARM

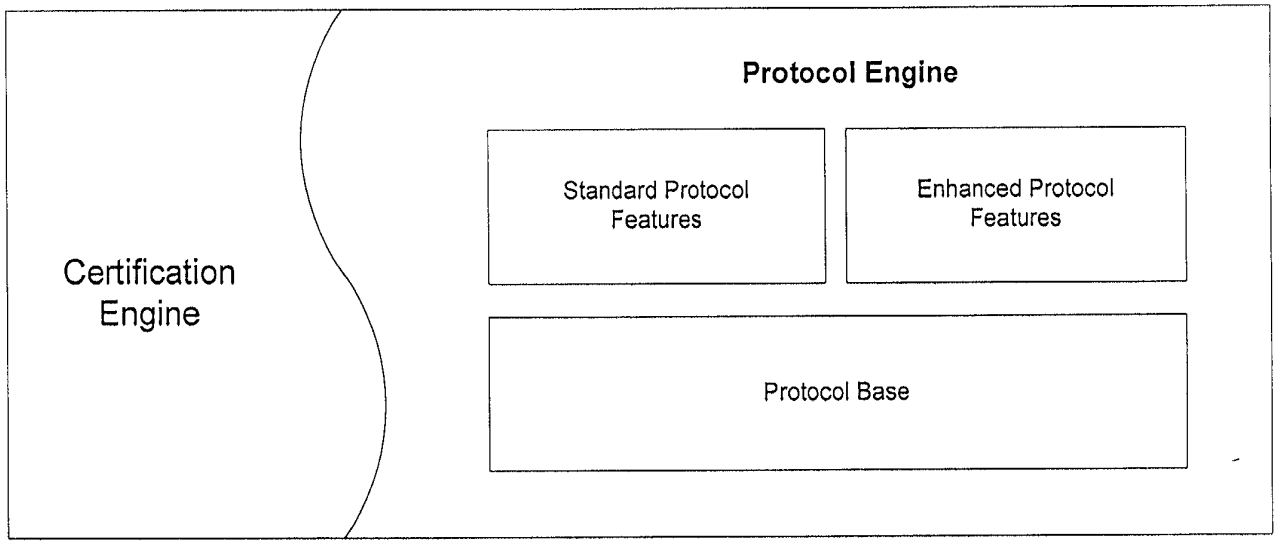


FIG. 6

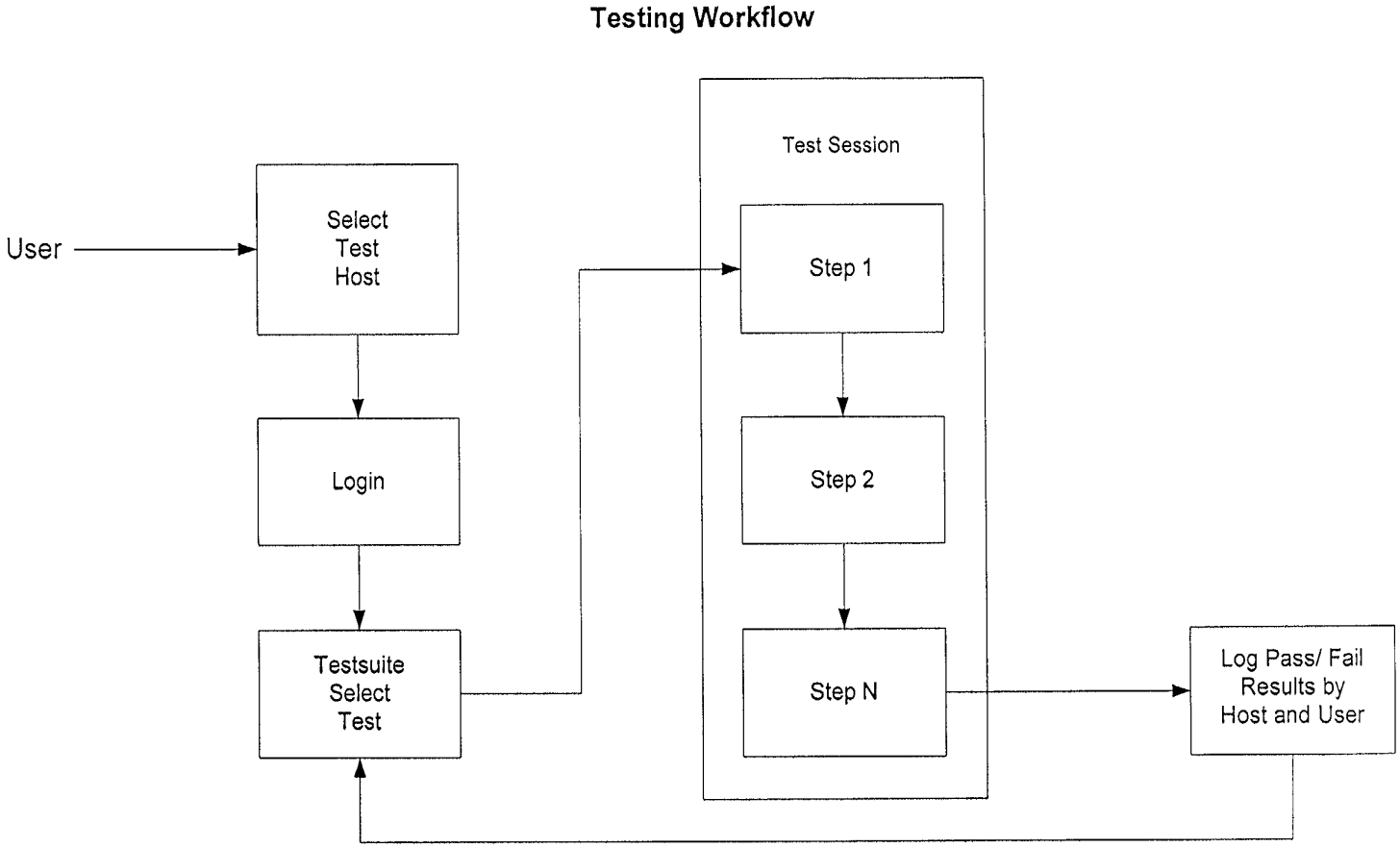

Testing Workflow
Test Session
User
Select Test Host
Login
Testsuite Select Test
Step 1
Step 2
Step N
Log Pass/ Fail Results by Host and User

FIG. 7

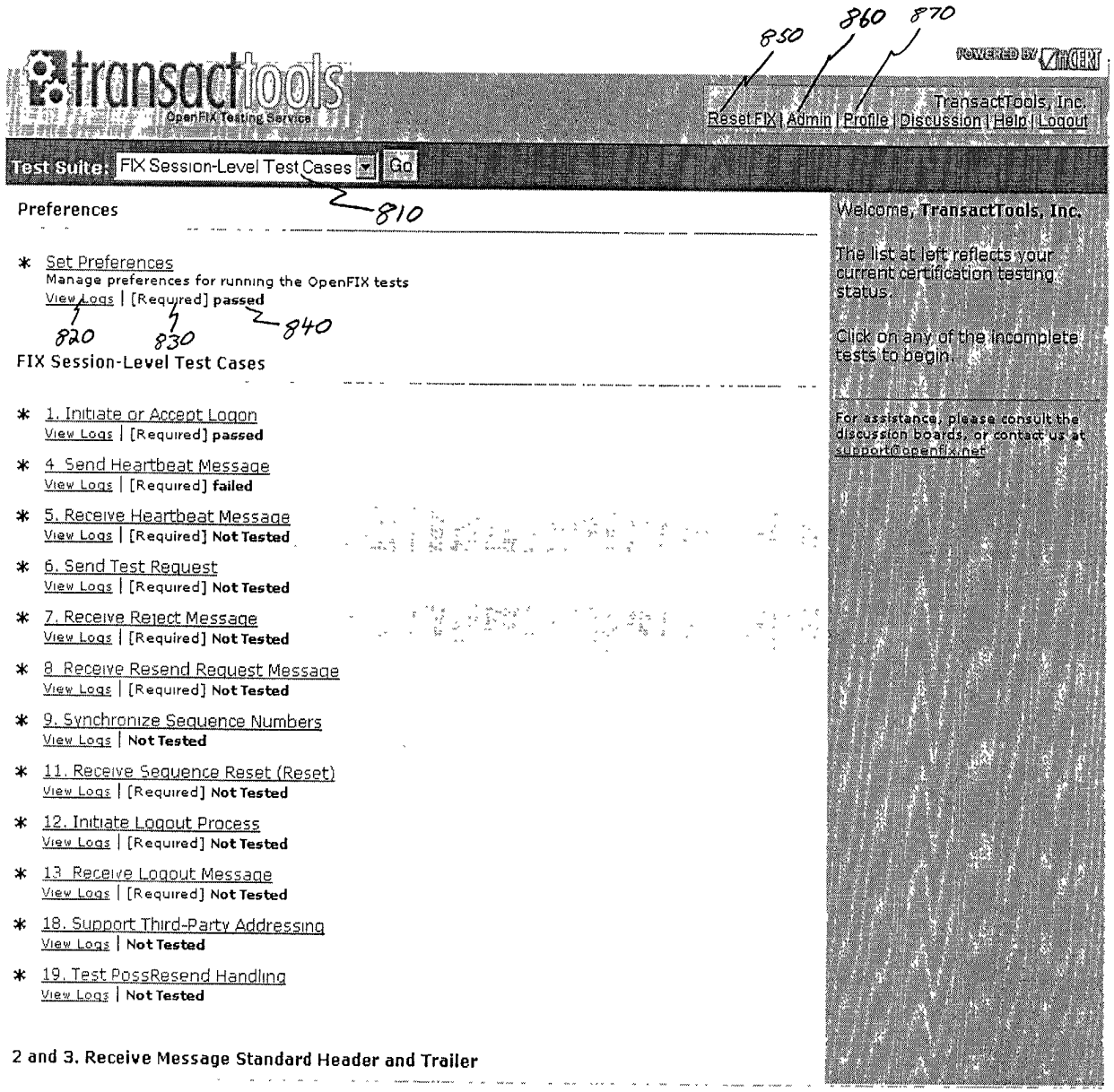

850
860
870
transactTools
OpenFIX Testing Service
POWERED BY FIXCERT
TransactTools, Inc.
Reset FIX | Admin | Profile | Discussion | Help | Logout
Test Suite: FIX Session-Level Test Cases Go
810
Preferences
Set Preferences
Manage preferences for running the OpenFIX tests
View Logs | [Required] passed
820
830
840
FIX Session-Level Test Cases
1. Initiate or Accept Logon
View Logs | [Required] passed
4. Send Heartbeat Message
View Logs | [Required] failed
5. Receive Heartbeat Message
View Logs | [Required] Not Tested
6. Send Test Request
View Logs | [Required] Not Tested
7. Receive Reject Message
View Logs | [Required] Not Tested
8. Receive Resend Request Message
View Logs | [Required] Not Tested
9. Synchronize Sequence Numbers
View Logs | Not Tested
11. Receive Sequence Reset (Reset)
View Logs | [Required] Not Tested
12. Initiate Logout Process
View Logs | [Required] Not Tested
13. Receive Logout Message
View Logs | [Required] Not Tested
18. Support Third-Party Addressing
View Logs | Not Tested
19. Test PossResend Handling
View Logs | Not Tested
2 and 3. Receive Message Standard Header and Trailer
Welcome, TransactTools, Inc.
The list at left reflects your current certification testing status.
Click on any of the incomplete tests to begin.
For assistance, please consult the discussion boards, or contact us at support@openfix.net

FIG. 8

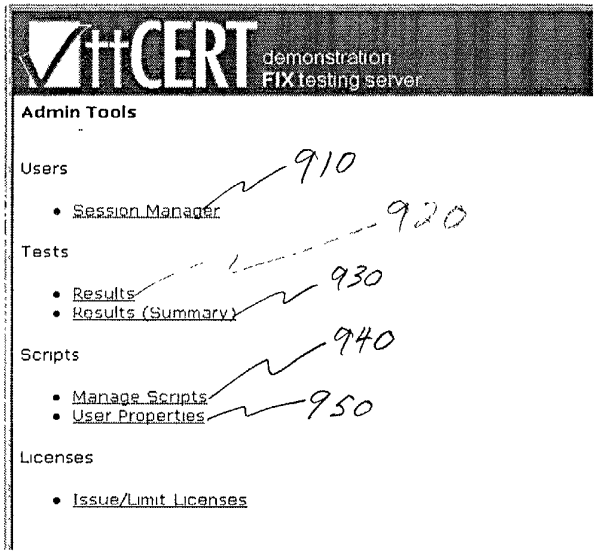

ttCERT
demonstration
FIX testing server
Admin Tools
Users
Session Manager
Tests
Results
Results (Summary)
Scripts
Manage Scripts
User Properties
Licenses
Issue/Limit Licenses
910
920
930
940
950

FIG. 9

Active Certification Sessions (as of 14:21:40) [Refresh]

demo

TransactTools, Inc. ( ) [Logout]

Web Session

Status:	Logged In
Login Time:	Thu May 17 14:20:35 EDT 2001
Last Activity Time:	Thu May 17 14:21:40 EDT 2001
Time Inactive:	0:0:0
Last Request:	/cert/demo/cert/admin/session.jsp

FIX Certification Test Session [Shutdown] [Reset FIX] [View Log]

Status:	In Progress
Script:	D1 - (Connect to server) urn:D1:1
Start Time:	[Thu May 17 14:21:35 EDT 2001]
FIX Connection Status:	**Not Connected**
IP Address:	N/A
Last Sent:	N/A
Last Received:	N/A

FIG. 10

FOCUS-3225960

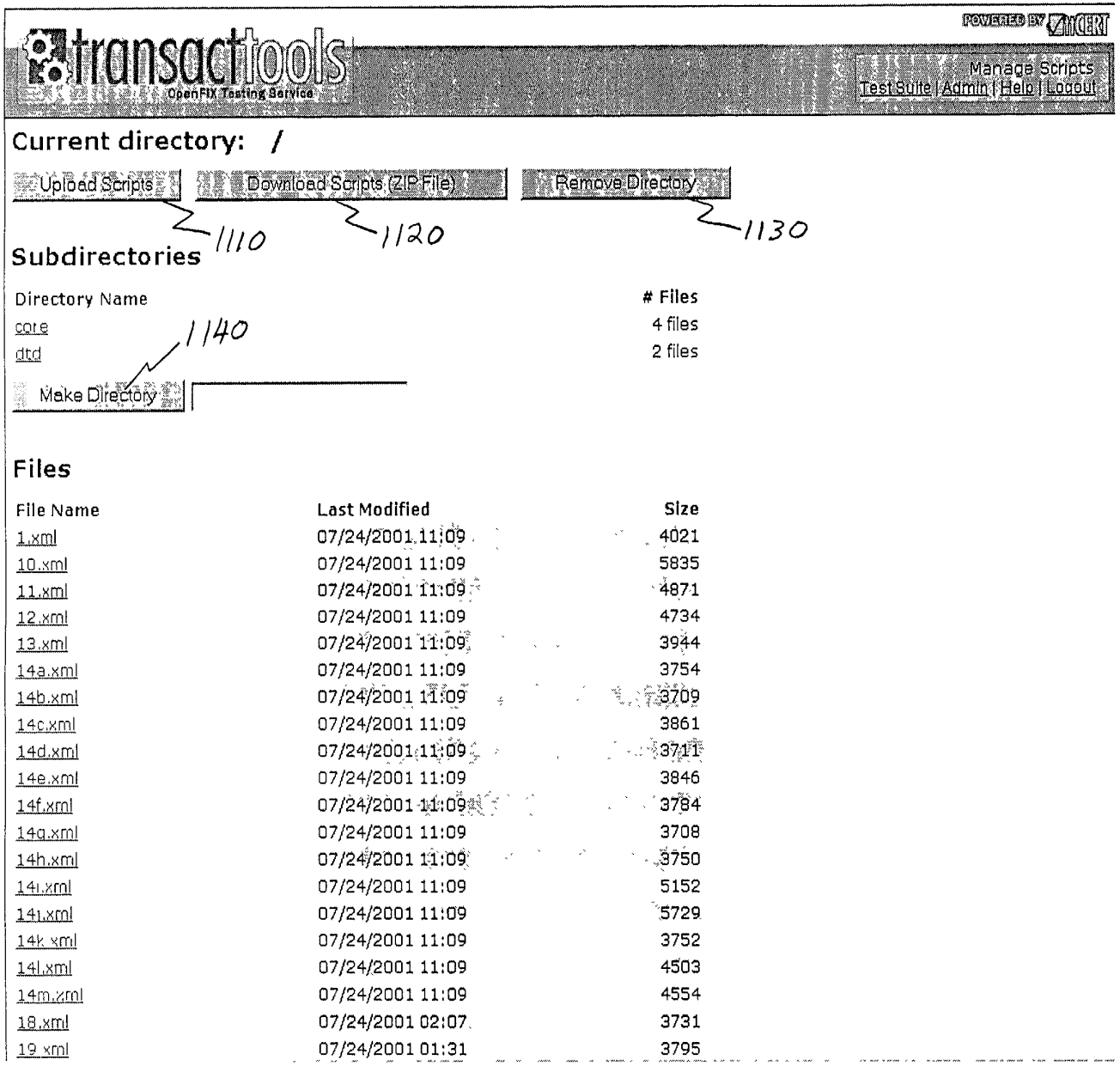


FIG. 11

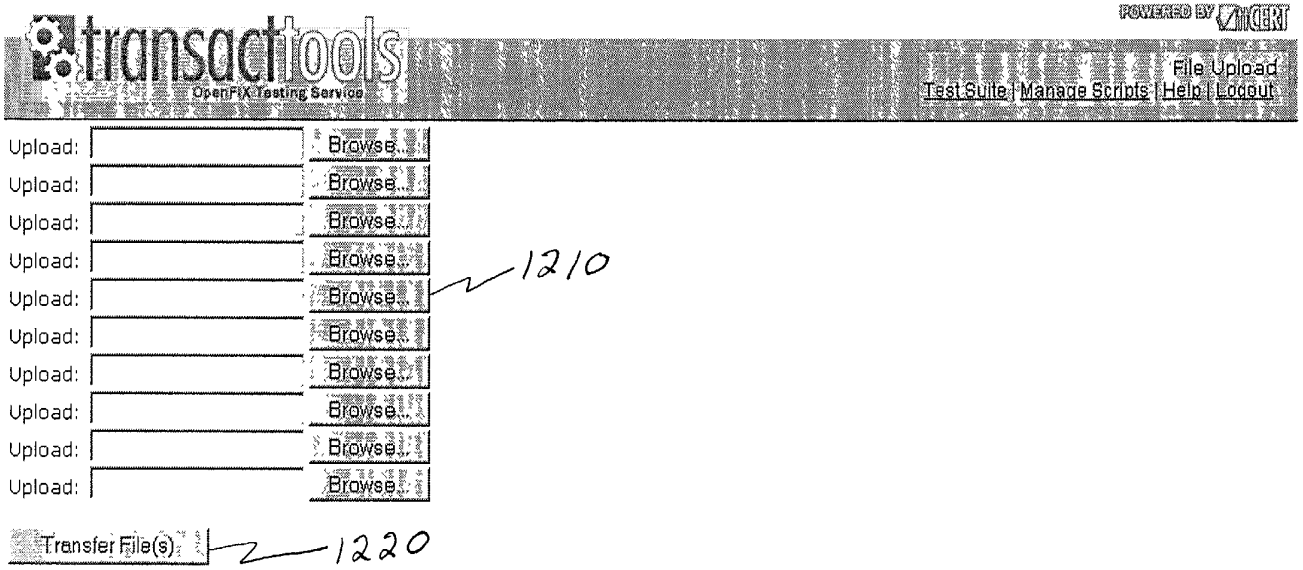

transactools
OpenFIX Testing Service
POWERED BY NIST
File Upload
Test Suite | Manage Scripts | Help | Logout
Upload:
Browse...
1210
Transfer File(s)
1220

FIG. 12

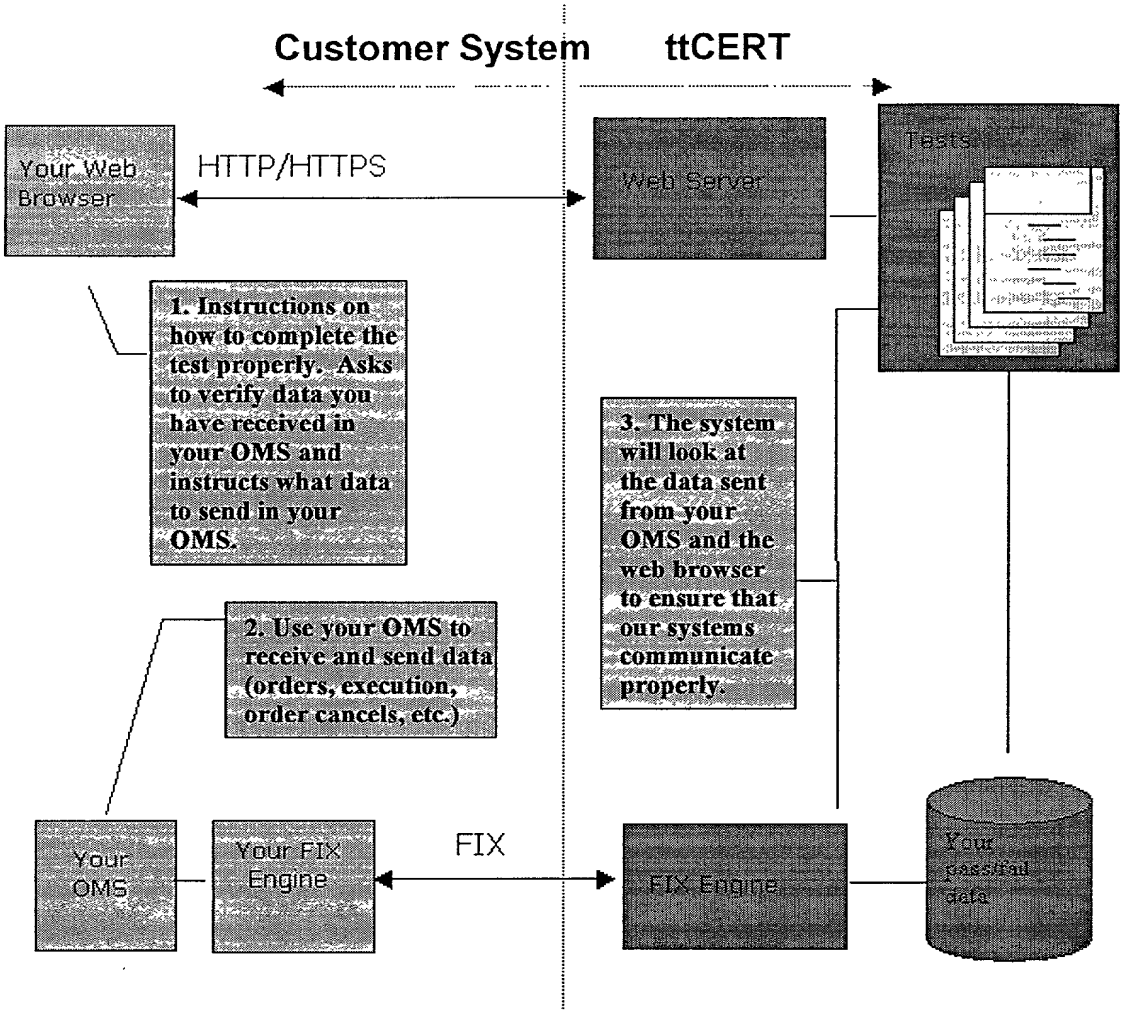

Customer System
ttCERT
Your Web Browser
HTTP/HTTPS
Web Server
Tests
1. Instructions on how to complete the test properly. Asks to verify data you have received in your OMS and instructs what data to send in your OMS.
3. The system will look at the data sent from your OMS and the web browser to ensure that our systems communicate properly.
2. Use your OMS to receive and send data (orders, execution, order cancels, etc.)
Your OMS
Your FIX Engine
FIX
FIX Engine
Your historical data

FIG. 13

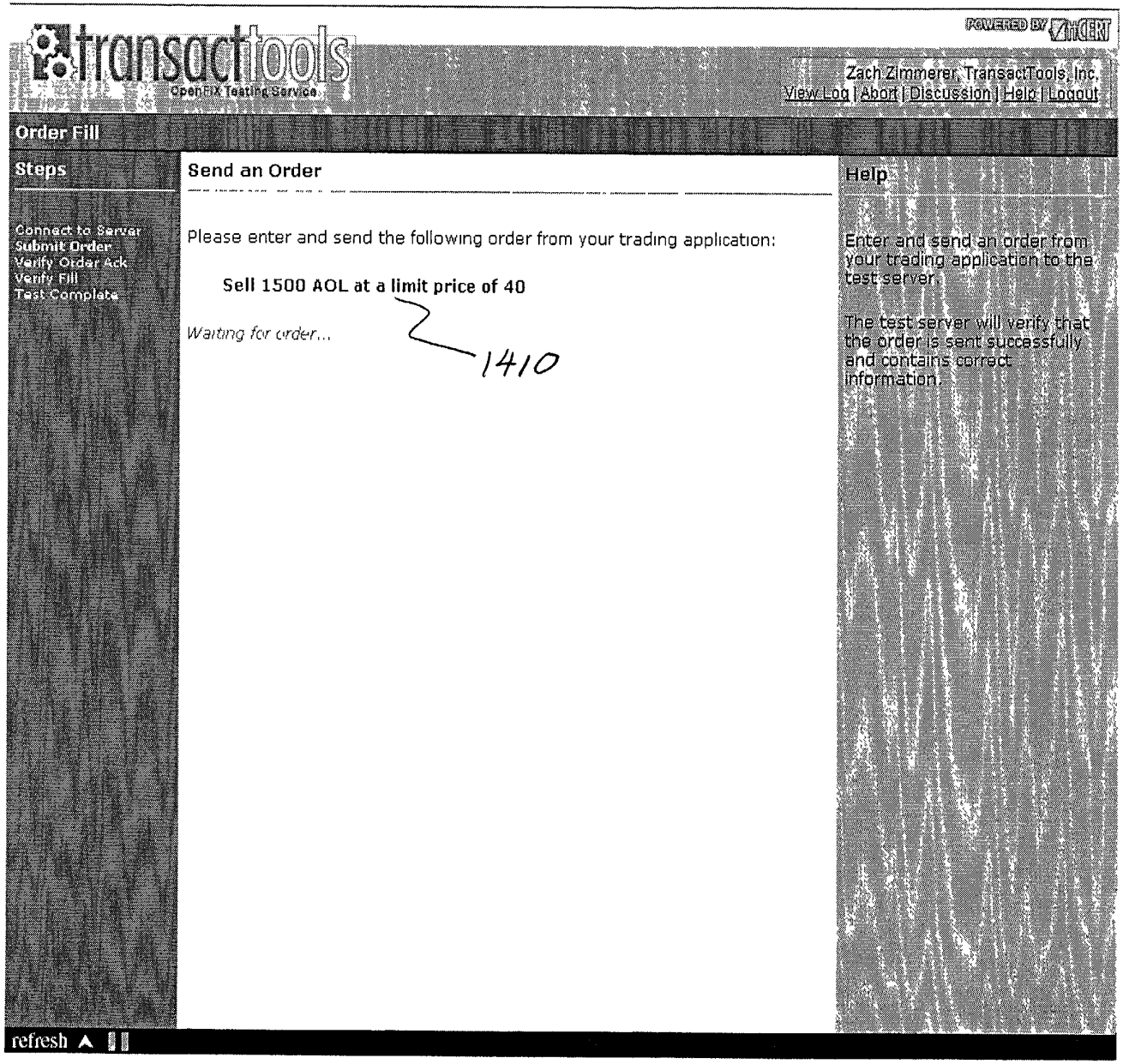

transactTools
OpenFIX Testing Service
POWERED BY FIXCERT
Zach Zimmerer, TransactTools, Inc.
View Log | Abort | Discussion | Help | Logout
Order Fill
Steps
Connect to Server
Submit Order
Verify Order Ack
Verify Fill
Test Complete
Send an Order
Please enter and send the following order from your trading application:
Sell 1500 AOL at a limit price of 40
Waiting for order...
1410
Help
Enter and send an order from your trading application to the test server.
The test server will verify that the order is sent successfully and contains correct information.
refresh

FIG. 14

addEventHandler(PARTIAL1SENT,verifyPartial1,PARTIAL2SENT,"Partial2Sent");

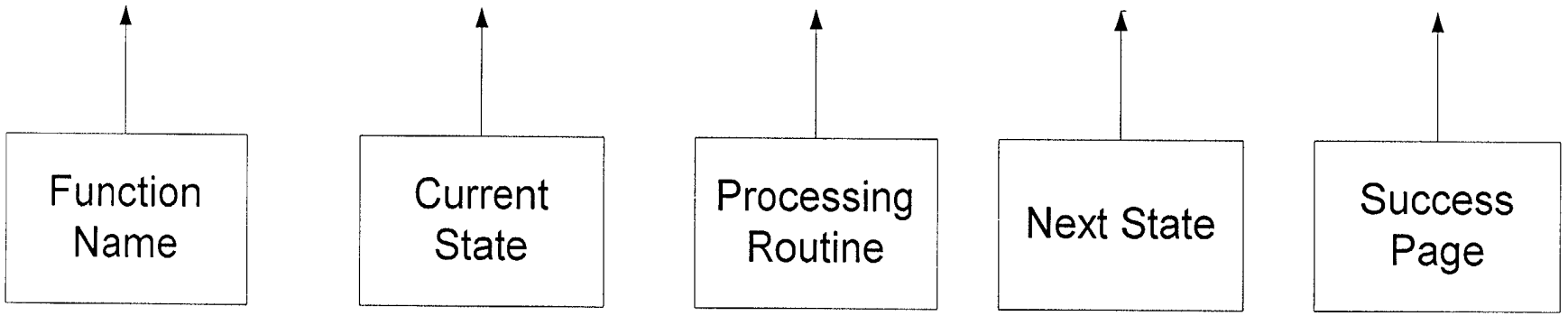


FIG. 15

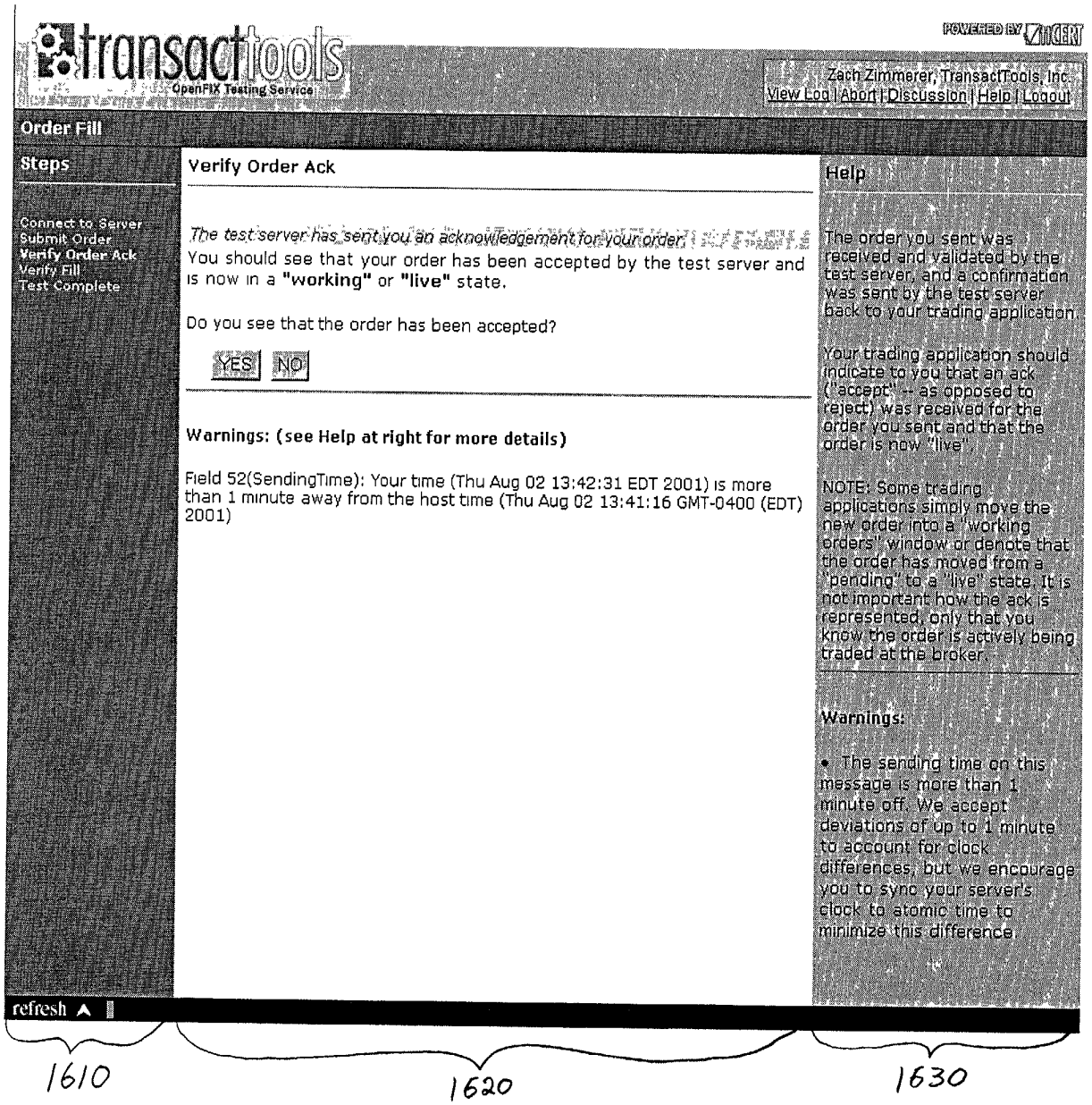
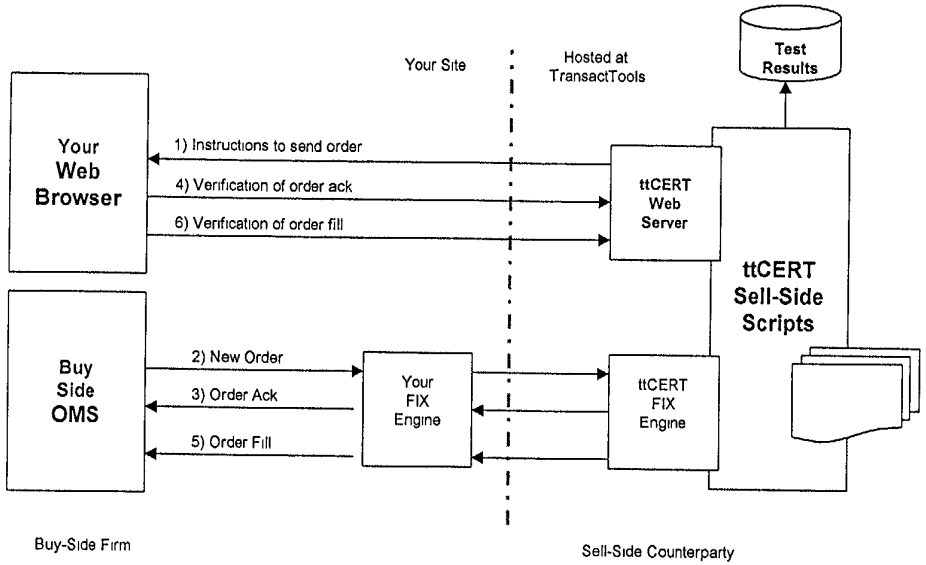

transactTools
OpenFIX Testing Service
POWERED BY TRIDENT
Zach Zimmerer, TransactTools, Inc.
View Log | Abort | Discussion | Help | Logout
Order Fill
Steps
Connect to Server
Submit Order
Verify Order Ack
Verify Fill
Test Complete
Verify Order Ack
The test server has sent you an acknowledgement for your order.
You should see that your order has been accepted by the test server and is now in a "working" or "live" state.
Do you see that the order has been accepted?
YES
NO
Warnings: (see Help at right for more details)
Field 52(SendingTime): Your time (Thu Aug 02 13:42:31 EDT 2001) is more than 1 minute away from the host time (Thu Aug 02 13:41:16 GMT-0400 (EDT) 2001)
Help
The order you sent was received and validated by the test server, and a confirmation was sent by the test server back to your trading application.
Your trading application should indicate to you that an ack ("accept" -- as opposed to reject) was received for the order you sent and that the order is now "live".
NOTE: Some trading applications simply move the new order into a "working orders" window or denote that the order has moved from a "pending" to a "live" state. It is not important how the ack is represented, only that you know the order is actively being traded at the broker.
Warnings:
• The sending time on this message is more than 1 minute off. We accept deviations of up to 1 minute to account for clock differences, but we encourage you to sync your server's clock to atomic time to minimize this difference.
refresh
1610
1620
1630

FIG. 16

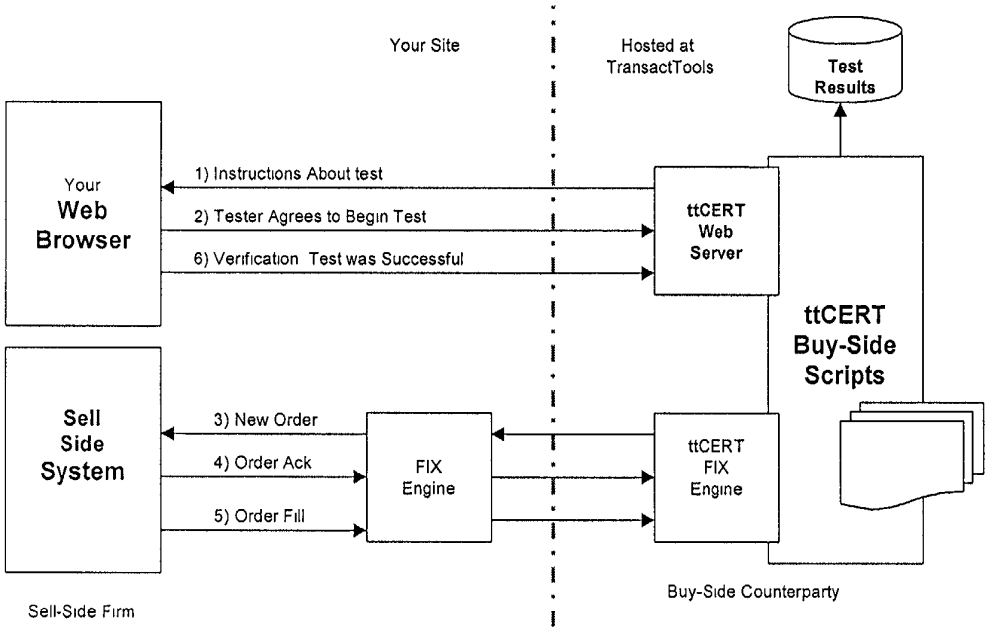
TRADE SECRET



Buy-Side Firm testing against a Sell-Side Counterparty that has used the ttCERT scripts to simulate its FIX behavior

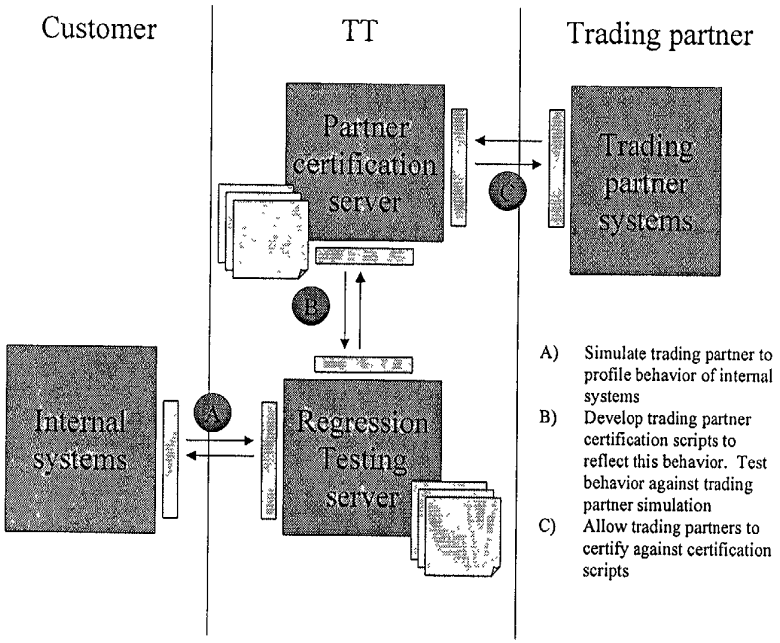
FIG. 17

PATENT SPECIFICATION



Sell-Side Firm testing against a Buy-Side Counterparty that has used the ttCERT scripts to simulate its FIX behavior

FIG. 18

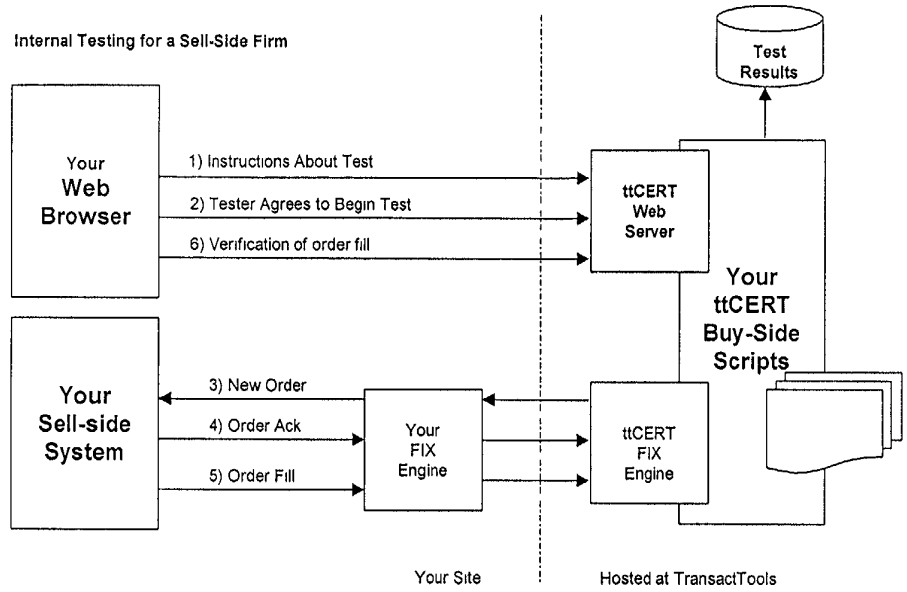


A) Simulate trading partner to profile behavior of internal systems

B) Develop trading partner certification scripts to reflect this behavior. Test behavior against trading partner simulation

C) Allow trading partners to certify against certification scripts

FIG. 19



As a sell-side firm, you write the buy-side scripts that run on the ttCERT server to simulate external buy-side customers

FIG. 20

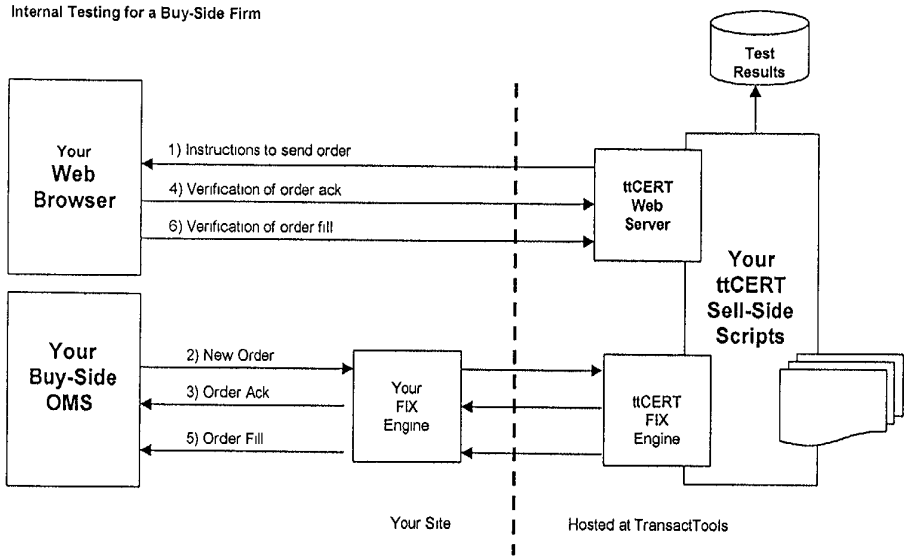

Internal Testing for a Buy-Side Firm
Test Results
Your Web Browser
1) Instructions to send order
4) Verification of order ack
6) Verification of order fill
ttCERT Web Server
Your ttCERT Sell-Side Scripts
Your Buy-Side OMS
2) New Order
3) Order Ack
5) Order Fill
Your FIX Engine
ttCERT FIX Engine
Your Site
Hosted at TransactTools
As a buy-side firm, you write the sell-side scripts that run on the ttCERT server to simulate your sell-side customers

FIG. 21

Internal Testing of Automated Scripts - Running Buy-Side Scripts Against Sell-Side Scripts

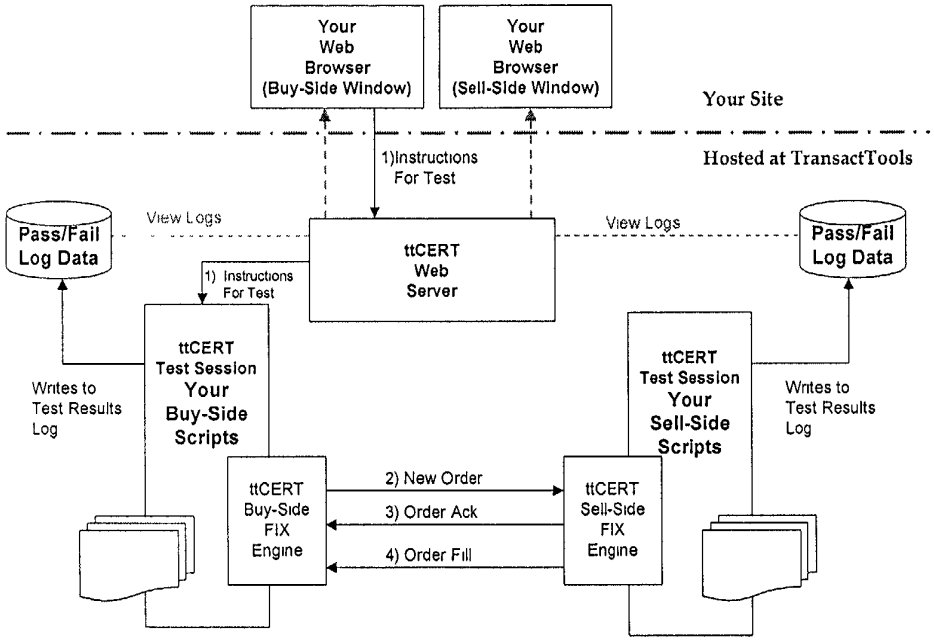


FIG. 22

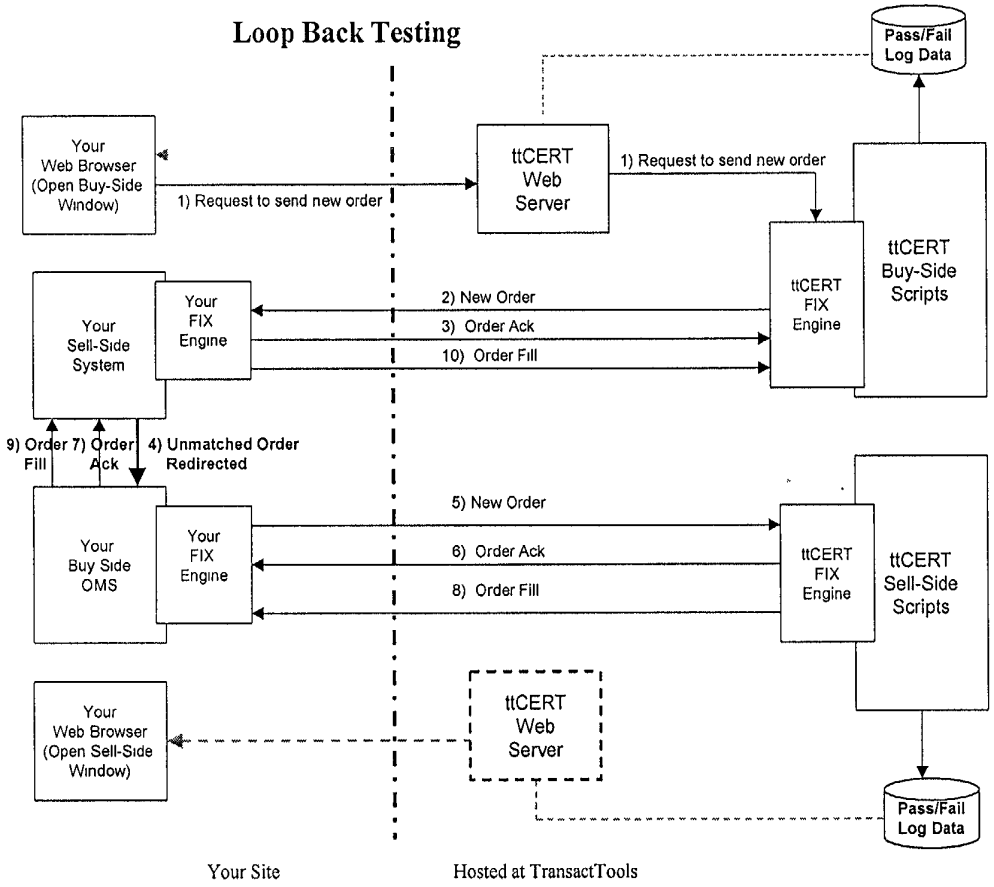

Loop Back Testing
Pass/Fail Log Data
Your Web Browser (Open Buy-Side Window)
1) Request to send new order
ttCERT Web Server
1) Request to send new order
ttCERT Buy-Side Scripts
ttCERT FIX Engine
Your Sell-Side System
Your FIX Engine
2) New Order
3) Order Ack
10) Order Fill
9) Order Fill
7) Order Ack
4) Unmatched Order Redirected
Your Buy Side OMS
Your FIX Engine
5) New Order
6) Order Ack
8) Order Fill
ttCERT FIX Engine
ttCERT Sell-Side Scripts
Your Web Browser (Open Sell-Side Window)
ttCERT Web Server
Pass/Fail Log Data
Your Site
Hosted at TransactTools

FIG. 23